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EXAMINER

BOYCE, ANDRE D

ART UNIT PAPER NUMBER

3623

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/024,449

Applicant(s)

CHANG ET AL.

Examiner

Andre Boyce

Art Unit

3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/13/02</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-63 have been examined.

***Priority***

2. It is noted that this application appears to claim subject matter disclosed in prior Application No. 60/318,221, filed September 7, 2001. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be

accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 58, and 61 are rendered vague and indefinite for use of the phrase "preferentially in real-time" in lines 3, 7, and 3 of the claims, respectively. It is unclear if this phrase is intended to further limit the claim, since "preferentially" equates to the limitation not necessarily having to be in the claim (i.e., it's only a preference, not a necessity). Claims 2-57, 59, 60, 62, 63 are rejected based upon the same rationale, since they are dependent claims.

Claim 16 recites the limitation "the optimal value" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claims 17-19 and 21-57 are rejected based upon the same rationale, since they depend therefrom.

Claim 28 is rendered vague and indefinite for use of the phrase "assuming that each message alternative is a content," since one could always "assume" that a message is not a content. Claims 29 and 30 are rejected based upon the same rationale, since they depend therefrom.

Claims 31 and 41-44 recite the limitation "said allocation algorithm" in line 1 of the claims. There is insufficient antecedent basis for this limitation in the claim. Claims 32-34 are rejected based upon the same rationale, since they depend from claim 31.

Claims 48 and 49 are rendered vague and indefinite for use of the term "warrant" in lines 3 and 2 of the claims, respectively. It is unclear when the measurement of

the relative importance will be warranted. As such, it would be difficult to determine when the claim has been infringed.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 7, 9, 10, 13, 14, 16-18, 45, 46, 48-50, 58, and 61-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Merriman et al (US 2002/0099600).

As per claim 1, Merriman et al disclose a method of multiattribute analysis and optimization for providing automated measurements of the importance of attributes and attribute values of message alternatives (i.e., predictive model 10 to determine an advertisement 12, ¶ 0031) and for, in an automated manner, preferentially in real-time, improving the stage-to-stage performance of said message alternatives in a multi-stage message campaign in an interactive measurable medium (i.e., ranked order of advertisements 12 user is most likely to respond, ¶ 0031); said method including: obtaining historical information including historical performance data for message performance for at least one previous stage of said campaign (i.e., database of historical advertisements 20, ¶ 0031); generating a multiattribute system

that describes said message alternatives in terms of said attributes and said attribute values (i.e., direct advertisement selected based on various criteria, including using characteristics, past exposure, and historical statistical performance, ¶¶ 0041-42); determining the importance of said attributes and said attribute values to the performance of said message alternatives (i.e., considering all factors, the expected return for the offer is calculated, ¶ 0042); optimizing campaign performance through allocation of message alternatives to visitors during said message campaign (i.e., predictive model 10 processes the inputs and outputs a direct ad or a ranked order of direct ads that the user is most likely to respond, ¶ 0031); and determining a next allocation for each new visitor for a next stage of the campaign (i.e., feedback information is used to further refine future predictions about optimal ads to deliver to future users, ¶ 0033).

As per claim 7, Merriman et al disclose historical information selected from the set consisting of a visitor identifier, a message alternative identifier for the message alternative shown to said visitor, a type of action or types of actions taken by each said visitor, and a payoff for each of the actions taken by said visitors (i.e., payment rate for the offer, ¶ 0042).

As per claims 9 and 10, Merriman et al disclose historical information further includes additional information selected from the set consisting of a message type (i.e., offer type including direct ads and surveys, ¶ 0041), a message type and a corresponding alternative clicked on by a visitor, a web site and a section of the web site where the visitor was presented with and saw or had an opportunity to see a

banner ad, a time of the visitors visit, a visitor demographic information, a visitor psychographic information, a visitor demographic profile, a visitor psychographic profile, and combinations thereof.

As per claim 13, Merriman et al disclose said message alternative is selected from a group of message alternatives consisting of an email, an ad (§ 0040), a banner ad, a banner, a splash page, a home page, a jump page, a landing page, media programming, media content, a political campaign message, a survey, a poll, a news headline, a headline, a ballot measure, a ballot initiative, one or more sports scores, one or more sports scores for a local, regional, collegiate, or amateur sports team or teams, and combinations thereof.

As per claim 14, Merriman et al disclose each exposure of a message alternative to a visitor results in a payoff result (i.e., revenue is calculated as the payout, § 0034), a performance of said message alternative for a visitor segment being based at least in part on the expected value of the payoff results for the visitors for that visitor segment (i.e., predictive model bases its ad selection on various factors, including payment rate of offer, § 0042), said payoff result being a function of a measurement including at least one measurement selected from the set of measurements consisting of; a number of actions (i.e., conversion, including a sale or a click through, § 0034), a number of signups, a number of purchases, a binary result, a value of purchases, a revenue amount, a sales amount, a profit amount, a continuous function of a continuous variable, a continuous function of a discontinuous variable, a continuous function of a binary variable, a discrete function



of a continuous variable, a discrete function of a discontinuous variable, a discrete function of a binary variable, and combinations thereof.

As per claim 16, Merriman et al disclose generating at least one report on the optimal value for each attribute (i.e., transactions at a remote direct advertiser site are reported reporting, ¶ 0084); generating new message alternatives with the values of each attribute indicated by a multiattribute analysis that uses prior expectations and payoff criteria to arrive at message alternative evaluation (i.e., predictive model bases its ad selection on various factors, including payment rate of offer, ¶ 0042); adding said new message alternatives to the set of available messages to be optimized (i.e., set of offers to be reviewed, ¶ 0042); and choosing the best message alternative from among the choices presented and proactively creating message alternatives that are expected to perform well within some confidence level (i.e., best offer selected based upon expected return, including probability of conversion, ¶ 0042).

As per claim 17, Merriman et al disclose multiattribute system is of standard form (i.e., predictive model bases its ad selection based on multiple attributes, that may have various values, ¶ 0042).

As per claim 18, Merriman et al disclose multiattribute system is reduced to standard form (i.e., attributes in the predictive model may be changed and/or supplemented with additional criteria 18, ¶ 0031).

As per claim 45, Merriman et al disclose reports on the optimal value for each attribute are provided only if it is determined that said multiattribute system

supports said measurement of the relative importance to said message alternative performance of said attributes and said attribute values (i.e., report provides values of transactions at the website, only including those supported by the predictive model, ¶ 0084).

As per claim 46, Merriman et al disclose said multiattribute system is reduced to standard form to determine if said multiattribute system supports said measurement of the relative importance to said message alternative performance of said attributes and said attribute values (i.e., attributes in the predictive model may be changed and/or supplemented with additional criteria 18, ¶ 0031).

As per claim 48, Merriman et al disclose reports on the optimal value for each attribute are provided only if it is determined that said multiattribute system and said performance data warrant said measurement of the relative importance to said message alternative performance of said attributes and said attribute values (i.e., report in the form of an email message is generated based on a successful action such as a sale, ¶ 0044).

As per claim 49, Merriman et al disclose an acceptance/rejection test is employed to determine if said multiattribute system and said performance data warrant said measurement of the relative importance to said message alternative performance of said attributes and said attribute values (i.e., monitoring and updating the predictive model based on user's response, ¶¶ 0015-16).

As per claim 50, Merriman et al disclose reports on said relative importance to said message alternative performance of said attributes and said attribute values

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are provided to the marketing manager or other interested party (i.e., report in the form of an email message is generated and sent to the predictive model server, ¶ 0044).

Claim 58 is rejected based upon the rejection of claim 1, since it is the computer program product claims corresponding to the method claims.

Claim 61 is rejected based upon the rejection of claim 1, since it is the system claim corresponding to the method claim.

As per claim 62, Merriman et al disclose said first and second processing means further comprise a server having a processor and associated memory (i.e., advertisement server, ¶ 0036).

As per claim 63, Merriman et al disclose input/output means including a connection to a network (i.e., internet advertising network, ¶ 0035).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-6, 8, 11, 12, 15, 19-26, 59, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merriman et al (US 2002/0099600), in view of Tamayo et al (USPN 6,836,773).

As per claim 2, Merriman et al does not disclose processing said historical performance data to identify erroneous or possibly erroneous or unusual historical performance data. Tamayo et al discloses pre-processing web data, including data cleaning in order to remove redundant or irrelevant information (column 16, lines 24-31). Both Merriman et al and Tamayo et al are concerned with internet based data collection, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include processing said historical performance data to identify erroneous data in Merriman et al, as seen in Tamayo et al, in order to facilitate extracting useful information from files (as disclosed by Tamayo et al, column 16, lines 31-32), making the Merriman et al system more effective.

As per claim 3, Merriman et al does not disclose cleaning said historical performance data to correct said identified erroneous or possible erroneous or unusual historical performance data. Tamayo et al discloses pre-processing web data, including data cleaning in order to remove redundant or irrelevant information (column 16, lines 24-31). Both Merriman et al and Tamayo et al are concerned with internet based data collection, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include cleaning said historical performance data in Merriman et al, as seen in Tamayo et al, in order to facilitate extracting useful information from files (as disclosed by Tamayo et al, column 16, lines 31-32), making the Merriman et al system more effective.

As per claims 4 and 5, Merriman et al disclose discounting at least a portion of said historical performance data from said at least one previous stage to grant more

weight to more recent historical performance data than to less recent historical performance data. Tamayo et al disclose data updated with data collected at subsequent sessions, thereby increasing the accuracy of predictions (column 10, lines 39-41). Both Merriman et al and Tamayo et al are concerned with internet based data collection, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include granting more weight to more recent historical performance data than to less recent historical performance data in Merriman et al, as seen in Tamayo et al, in order to increase the accuracy of the predictions, as disclosed in Tamayo et al (column 10, lines 40-41), thus making the Merriman et al system more effective.

As per claim 6, Merriman et al disclose historical information selected from the set consisting of a visitor identifier, a message alternative identifier for the message alternative shown to said visitor, a type of action or types of actions taken by each said visitor, and a payoff for each of the actions taken by said visitors (i.e., payment rate for the offer, ¶ 0042).

As per claim 8, Merriman et al disclose historical information further includes additional information selected from the set consisting of a message type (i.e., offer type including direct ads and surveys, ¶ 0041), a message type and a corresponding alternative clicked on by a visitor, a web site and a section of the web site where the visitor was presented with and saw or had an opportunity to see a banner ad, a time of the visitors visit, a visitor demographic information, a visitor psychographic

information, a visitor demographic profile, a visitor psychographic profile, and combinations thereof.

As per claim 11, Merriman et al disclose said historical information further includes: information selected from the set consisting of a visitor identifier, a message alternative identifier for the message alternative shown to said visitor, a type of action or actions taken by said visitor, and a payoff for each of the actions taken by said visitors, a message type (i.e., offer type including direct ads and surveys, ¶ 0041), a message type and a corresponding alternative clicked on by a visitor, a web site and a section where the visitor was presented and saw a banner ad, a time of the visitors visit, a visitor demographic information, a visitor psychographic information, a visitor demographic profile, a visitor psychographic profile, and combinations thereof. Merriman et al does not disclose processing said historical data to identify and correct any erroneous data; discounting at least a portion of said performance data from said at least one previous stage to grant more weight to more recent performance data than to less recent performance data. Tamayo et al discloses pre-processing web data, including data cleaning in order to remove redundant or irrelevant information (column 16, lines 24-31). In addition, Tamayo et al disclose data updated with data collected at subsequent sessions, thereby increasing the accuracy of predictions (column 10, lines 39-41). Both Merriman et al and Tamayo et al are concerned with internet based data collection, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include processing said historical performance data to identify erroneous data and

granting more weight to more recent historical performance data than to less recent historical performance data in Merriman et al, as seen in Tamayo et al, in order to facilitate extracting useful information from files (as disclosed by Tamayo et al, column 16, lines 31-32), making the Merriman et al system more effective.

As per claim 12, Merriman et al disclose said message alternative is selected from a group of message alternatives consisting of an email, an ad (§ 0040), a banner ad, a banner, a splash page, a home page, a jump page, a landing page, media programming, media content, a political campaign message, a survey, a poll, a news headline, a headline, a ballot measure, a ballot initiative, one or more sports scores, one or more sports scores for a local, regional, collegiate, or amateur sports team or teams, and combinations thereof.

As per claim 15, Merriman et al disclose each exposure of a message alternative to a visitor results in a payoff result (i.e., revenue is calculated as the payout, § 0034), a performance of said message alternative for a visitor segment being based at least in part on the expected value of the payoff results for the visitors for that visitor segment (i.e., predictive model bases its ad selection on various factors, including payment rate of offer, § 0042), said payoff result being a function of a measurement including at least one measurement selected from the set of measurements consisting of; a number of actions (i.e., conversion, including a sale or a click through, § 0034), a number of signups, a number of purchases, a binary result, a value of purchases, a revenue amount, a sales amount, a profit amount, a continuous function of a continuous variable, a continuous function of a

discontinuous variable, a continuous function of a binary variable, a discrete function of a continuous variable, a discrete function of a discontinuous variable, a discrete function of a binary variable, and combinations thereof.

As per claims 19 and 20, Merriman et al does not disclose processing includes discounting said performance data; and said discounting being achieved using at least one of discounting scheme selected from the set of discounting schemes consisting of: a geometric discounting scheme, a linear weighting discounting scheme, a non-linear weighting discounting scheme, and combinations thereof. Tamayo et al disclose data updated with data collected at subsequent sessions, thereby increasing the accuracy of predictions (column 10, lines 39-41). Both Merriman et al and Tamayo et al are concerned with internet based data collection, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include granting more weight to more recent historical performance data than to less recent historical performance data in Merriman et al, as seen in Tamayo et al, in order to increase the accuracy of the predictions, as disclosed in Tamayo et al (column 10, lines 40-41), thus making the Merriman et al system more effective.

As per claim 21, Merriman et al disclose estimating the distribution of the expected payoff of future performance of said message alternatives (i.e., best offer selected based upon expected return, including probability of conversion, ¶ 0042).

As per claim 22, Merriman et al disclose said estimate is obtained under the assumption that the underlying performance model implied by said multiattribute



system holds (i.e., expected return is based on performance of predictive model, ¶ 0042).

As per claim 23, Merriman et al disclose said estimate is obtained by first estimating the distribution of expected payoff of future performance of said message alternatives assuming said underlying performance model implied by said multiattribute system holds, then updating the second said estimate to remove said assumption (i.e., predictive model processes inputs in order to determine expected return, wherein suggestion is optionally filtered by additional criteria, ¶ 0031).

As per claim 24, Merriman et al disclose said estimate is employed for the purpose of allocating future campaign impressions amongst said message alternatives to optimize future expected campaign performance (i.e., dynamic replacement of poorly performing ads based upon expected return, ¶¶ 0018 and 0024).

As per claim 25, Merriman et al disclose said allocation method comprises performing a pairwise comparison procedure among said plurality of message alternatives (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042).

As per claim 26, Merriman et al disclose computing an expected value of a payoff distribution of each message alternative (i.e., calculation of the expected return, ¶ 0042) and an error in said payoff distribution expected value (i.e., calculating performance after a statistically significant sampling period, wherein the statistically significant period includes an error (¶ 0017); and comparing in pairwise

manner the expected value based statistic of a selected message alternative with the same expected value based statistic for each other of the message alternatives (i.e., comparing expected return to previously rated offers, ¶ 0042).

Claims 59-60 are rejected based upon the rejections of claims 11 and 12, respectively, since they are the computer program product claims corresponding to the method claims.

9. Claims 27-34 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merriman et al (US 2002/0099600), in view of Tamayo et al (USPN 6,836,773), in further view of Dunning et al (US 2003/0229537).

As per claim 27, Merriman et al disclose selecting a first message alternative and a second message alternative from among said plurality of message alternatives (i.e., current offer is compared to all others in order to determine highest expected return, ¶ 0042). Neither Merriman et al nor Tamayo et al disclose computing a quotient determined as difference between the estimate of the said expected value divided by a standard error in the difference between the estimate of the expected value for each of said first and second message alternatives; and determining if said difference is within a predetermined magnitude relationship of, including greater than, a threshold cutoff value  $c_1$ , and: (i) if said difference is within said predetermined magnitude relationship of said threshold cutoff value, then identifying the second selected message alternative as a member of a non-contending message class. Dunning et al disclose computing a quotient via a chi-

squared test, wherein the number of occurrences of an event is determined via expected value, wherein the significance of the difference is determined and unexpected co-occurrence defined (§§ 0034-35). Further, determining if said difference is within a predetermined magnitude relationship of, including greater than, a threshold cutoff value  $c_1$  is old and well known in the art to derive threshold values in statistical analysis of expected value. Merriman et al, Tamayo et al, and Dunning et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include computing a quotient determined as difference between the estimate of the said expected value divided by a standard error in the difference between the estimate of the expected value for each of said first and second message alternatives in Merriman et al, as seen in Dunning et al, as an effective means in determining which advertisements should be presented, thus making Merriman et al a more robust and flexible system.

As per claim 28, Merriman et al disclose assuming that each message alternative is a content; repeating said selecting, said computing a quotient, said computing a difference, and said determining for other all other pairs of said message alternatives on a pairwise basis so that when all possible pairwise comparisons have been made each message alternative will have been sorted into one contender and said non-contender classes (i.e., comparison of all offers, wherein the best offer is sent and shown to the user, as a contender, § 0042).

As per claim 29, Merriman et al disclose performing said repeating for all other pairs of message alternatives on a pairwise basis for each optimization (i.e., comparison of all offers, wherein the best offer is sent and shown to the user, as a contender, ¶ 0042).

As per claim 30, Merriman et al disclose initially uniformly allocating said message alternatives prior to performing a first optimization (i.e., selection of optimally performing advertisements from a pool, ¶ 0013).

As per claim 31, Merriman et al disclose said allocation algorithm comprises a pairwise comparison, said message alternatives are sorted into a contender class and a noncontender class (i.e., selecting ads that are estimated to perform optimally from a pool of ads versus those that are not estimated to perform optimally, ¶¶ 0012-0013), and for at least one identified stage in a messaging campaign all visitors are allocated equally among message alternatives belonging to said contender class, and no visitors are allocated to message alternatives belonging to said noncontender class (i.e., those that do perform optimally are selected as direct ads, thus exposed to some visitors, wherein those not chosen are not shown to any visitors, ¶ 0013)

As per claim 32, Merriman et al disclose said at least one identified stage comprises an initial stage (i.e., initial display of ad, based upon the number of conversions, ¶ 0034 and figure 2).

As per claim 33, Merriman et al disclose said at least one identified stage comprises a plurality of stages (i.e., plurality of conversions, ¶ 0034 and figure 2).

As per claim 34, Merriman et al disclose said at least one identified stage comprises all stages (i.e., all conversions up unit the maximum number of conversions is reached, ¶ 0034 and figure 2).

As per claim 41, Merriman et al disclose said allocation algorithm comprises a Pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al, Tamayo et al, nor Dunning et al disclose the cutoff  $c_1$  is in the range substantially between 0-1.0. However, it is well known in the art to derive values between 0-1.0 in statistical analysis of expected value, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include cutoff  $c_1$  is in the range substantially between 0-1.0 in Merriman et al, as an effective means of determining a threshold value based upon expected value analysis in order to make the system more robust.

As per claim 42, Merriman et al disclose said allocation algorithm comprises a Pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al, Tamayo et al, nor Dunning et al disclose the cutoff  $c_1$  is substantially 0.5. However, it is well known in the art to derive values substantially 0.5 in statistical analysis of expected value, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include cutoff  $c_1$  is substantially 0.5 in Merriman et al, as an effective means of determining a threshold value based upon expected value analysis in order to make the system more robust.

As per claim 43, Merriman et al disclose said allocation algorithm comprises a Pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al, Tamayo et al, nor Dunning et al disclose the cutoff  $c_1$  is greater than or equal to 1. However, it is well known in the art to derive values greater than or equal to 1 in statistical analysis of expected value, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include cutoff  $c_1$  is greater than or equal to 1 in Merriman et al, as an effective means of determining a threshold value based upon expected value analysis in order to make the system more robust.

As per claim 44, Merriman et al disclose said allocation algorithm comprises a Pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al, Tamayo et al, nor Dunning et al disclose the cutoff  $c_1$  is greater than 1. However, it is well known in the art to derive values greater than 1 in statistical analysis of expected value, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include cutoff  $c_1$  is greater than 1 in Merriman et al, as an effective means of determining a threshold value based upon expected value analysis in order to make the system more robust.

10. Claims 35-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merriman et al (US 2002/0099600), in view of Tamayo et al (USPN 6,836,773), in further view of Marsh et al (USPN 5,848,397).

As per claim 35, Merriman et al et al disclose said allocation algorithm comprises a pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al nor Tamayo et al disclose message alternatives are sorted into more than two classes. Marsh et al discloses ads divided into a plurality of prioritized advertisement queues, including high, medium, low, and no priority (column 13, lines 26-29). Merriman et al, Tamayo et al, and Marsh et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include message alternatives are sorted into more than two classes in Merriman et al, as seen in Marsh et al, so that advertisements deemed to be more important are presented to a user first (see Marsh et al, column 3, lines 62-65), thus making the Merriman et al system more robust.

As per claim 36, neither Merriman et al nor Tamayo et al disclose said messages belonging to each said class are assigned different numbers of visitors. Marsh et al discloses ads divided into a plurality of prioritized advertisement queues, including high, medium, low, and no priority (column 13, lines 26-29), wherein the highest priority queue is selected as the current queue, displaying all the ads in the highest priority queue first then moving to subsequent queues in priority order (column 9,

lines 1-27). Merriman et al, Tamayo et al, and Marsh et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include said messages belonging to each said class are assigned different numbers of visitors in Merriman et al, as seen in Marsh et al, so that advertisements deemed to be more important are presented to a user first (see Marsh et al, column 3, lines 62-65), thus making the Merriman et al system more robust.

As per claim 37, neither Merriman et al nor Tamayo et al disclose said messages belonging to each said class are assigned substantially the same numbers of visitors. Marsh et al discloses ads divided into a plurality of prioritized advertisement queues, including high, medium, low, and no priority (column 13, lines 26-29), wherein the highest priority queue is selected as the current queue, displaying all the ads in the highest priority queue first then moving to subsequent queues in priority order (column 9, lines 1-27). Merriman et al, Tamayo et al, and Marsh et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include said messages belonging to each said class are assigned substantially the same numbers of visitors in Merriman et al, as seen in Marsh et al, so that advertisements deemed to be more important are presented to a user first (see Marsh et al, column 3, lines 62-65), thus making the Merriman et al system more robust.



As per claim 38, Merriman et al disclose said allocation algorithm comprises a pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al nor Tamayo et al disclose message alternatives are sorted into more than two classes and the allocation among contenders is not equal. Marsh et al discloses ads divided into a plurality of prioritized advertisement queues, including high, medium, low, and no priority (column 13, lines 26-29), wherein the highest priority queue is selected as the current queue, displaying all the ads in the highest priority queue first then moving to subsequent queues in priority order (column 9, lines 1-27). Merriman et al, Tamayo et al, and Marsh et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include message alternatives are sorted into more than two classes and the allocation among contenders is not equal in Merriman et al, as seen in Marsh et al, so that advertisements deemed to be more important are presented to a user first (see Marsh et al, column 3, lines 62-65), thus making the Merriman et al system more robust.

As per claim 39, Merriman et al disclose said allocation algorithm comprises a pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al nor Tamayo et al disclose message alternatives are sorted into more than two classes and the allocation among non-contenders is not equal. Marsh et al discloses ads

divided into a plurality of prioritized advertisement queues, including high, medium, low, and no priority (column 13, lines 26-29), wherein the highest priority queue is selected as the current queue, displaying all the ads in the highest priority queue first then moving to subsequent queues in priority order (column 9, lines 1-27).

Merriman et al, Tamayo et al, and Marsh et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include message alternatives are sorted into more than two classes and the allocation among non-contenders is not equal in Merriman et al, as seen in Marsh et al, so that advertisements deemed to be more important are presented to a user first (see Marsh et al, column 3, lines 62-65), thus making the Merriman et al system more robust.

As per claim 40, Merriman et al disclose said allocation algorithm comprises a pairwise comparison (i.e., if the expected return is higher than previously rated offers, the offer is marked as the best offer, ¶ 0042). Neither Merriman et al nor Tamayo et al disclose message alternatives are sorted into more than two classes and the allocation among contenders is not equal and the allocation among non-contenders is not equal. Marsh et al discloses ads divided into a plurality of prioritized advertisement queues, including high, medium, low, and no priority (column 13, lines 26-29), wherein the highest priority queue is selected as the current queue, displaying all the ads in the highest priority queue first then moving to subsequent queues in priority order (column 9, lines 1-27). Merriman et al,

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Tamayo et al, and Marsh et al are concerned with generating customized and/or personalized information to a customer, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include message alternatives are sorted into more than two classes and the allocation among contenders is not equal and the allocation among non-contenders is not equal in Merriman et al, as seen in Marsh et al, so that advertisements deemed to be more important are presented to a user first (see Marsh et al, column 3, lines 62-65), thus making the Merriman et al system more robust.

11. Claims 47, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merriman et al (US 2002/0099600), in view of Dunning et al (US 2003/0229537).

As per claims 47 and 51, Merriman et al does not disclose determination of said relative importance to said message alternative performance of said attributes and said attribute values includes determination of confidence intervals around said relative importance. Dunning et al disclose assuming a normal distribution, the difference between observed values and the expected value can be determined and squared, wherein the significance of the difference (i.e., confidence intervals) is then determined (§ 0035). Both Merriman et al and Dunning et al are concerned with recommendations to improve the interest of the user, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include determination of confidence intervals around said relative

importance in Merriman et al, as seen in Dunning et al, as an effective means of determining confidence intervals around said relative importance in order to make the Merriman et al system more robust.

As per claim 52, Merriman et al disclose performance measurement represents the click-through rates of the message alternatives (i.e., conversion, ¶ 0034). Merriman et al does not disclose said multiattribute function is the logodds function, and said reported relative importance to said message alternative performance of one of said attribute values is computed as  $100 * (\exp\{u\} - 1)$ , where said u represents a parameter estimate of a multiattribute parameter associated with said attribute value, and said reported relative importance to said message alternative performance of one of said attributes is computed as  $100x(\exp(u) - 1)$ , where said u represents the largest parameter estimate of a multiattribute parameter associated with said attribute values of said attribute. Dunning et al disclose computing a quotient via a chi-squared test, wherein the number of occurrences of an event is determined via expected value, wherein the significance of the difference is determined and un-expected co-occurrence defined (¶¶ 0034-35). Further, Dunning et al disclose assuming a normal distribution, the difference between observed values and the expected value can be determined and squared, wherein the significance of the difference (i.e., confidence intervals) is then determined (¶ 0035). Both Merriman et al and Dunning et al are concerned with recommendations to improve the interest of the user, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to

include determination of confidence intervals around said relative importance in Merriman et al, as seen in Dunning et al, as an effective means of determining confidence intervals around said relative importance in order to make the Merriman et al system more robust.

12. Claims 53-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merriman et al (US 2002/0099600), in view of Dunning et al (US 2003/0229537), in further view of Montague (USPN 6,954,731).

As per claim 53, neither Merriman et al nor Dunning et al disclose reports include a chart and a table. Montague discloses report generators that produce customized reports via a GUI presented graph display for business analysts to review or monitor, wherein various information could be presented including attribute values and actual versus predicted values (column 10, lines 52-67). Merriman et al, Dunning et al, and Montague are concerned with optimizing advertising campaigns, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a chart and a table in Merriman et al, as seen in Montague, as an effective means of communicating attribute values and detecting trends (see Montague, column 10, lines 55-59) in the Merriman et al system.

As per claim 54, neither Merriman et al nor Dunning et al disclose said chart is a bar chart where the length of the bars are determined by said reported relative importance of said attributes or said attribute values. Montague discloses report

generators that produce customized reports via a GUI presented graph display for business analysts to review or monitor, wherein various information could be presented including attribute values and actual versus predicted values (column 10, lines 52-67). Further, it is old and well known to have various lengths and colors of bars in a graph and or chart. Merriman et al, Dunning et al, and Montague are concerned with optimizing advertising campaigns, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include bar chart where the length of the bars are determined by said reported relative importance in Merriman et al, as seen in Montague, as an effective means of communicating attribute values and detecting trends (see Montague, column 10, lines 55-59) in the Merriman et al system.

As per claim 55, neither Merriman et al nor Dunning et al disclose the colors of said bars are determined by assigning each attribute a color, and whenever an attribute or a value of said attribute appears on a chart, coloring said bar with said color. Montague discloses report generators that produce customized reports via a GUI presented graph display for business analysts to review or monitor, wherein various information could be presented including attribute values and actual versus predicted values (column 10, lines 52-67). Further, it is old and well known to have various lengths and colors of bars in a graph and or chart. Merriman et al, Dunning et al, and Montague are concerned with optimizing advertising campaigns, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include colors of said bars are determined by

assigning each attribute a color in Merriman et al, as seen in Montague, as an effective means of communicating attribute values and detecting trends (see Montague, column 10, lines 55-59) in the Merriman et al system.

As per claim 56, neither Merriman et al nor Dunning et al disclose the colors of said bars are determined by, when reporting on an attribute, using one color if the lower confidence bound of the best attribute value for said attribute is less than zero, and using a second color otherwise; and likewise when reporting on an attribute value, using one color if the lower confidence bound of said attribute value is less than zero, and using a second color otherwise. Montague discloses report generators that produce customized reports via a GUI presented graph display for business analysts to review or monitor, wherein various information could be presented including attribute values and actual versus predicted values (column 10, lines 52-67). Further, it is old and well known to have various lengths and colors of bars in a graph and or chart. Merriman et al, Dunning et al, and Montague are concerned with optimizing advertising campaigns, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include using one color if the lower confidence bound of the best attribute value for said attribute is less than zero, and using a second color otherwise in Merriman et al, as seen in Montague, as an effective means of communicating attribute values and detecting trends (see Montague, column 10, lines 55-59) in the Merriman et al system.

As per claim 57, neither Merriman et al nor Dunning et al disclose the colors of said bars are determined by assigning each attribute a color and each attribute value a variant of the color assigned to its attribute, and whenever an attribute or an attribute value appears on a chart, coloring said bar with said color. Montague discloses report generators that produce customized reports via a GUI presented graph display for business analysts to review or monitor, wherein various information could be presented including attribute values and actual versus predicted values (column 10, lines 52-67). Further, it is old and well known to have various lengths and colors of bars in a graph and or chart. Merriman et al, Dunning et al, and Montague are concerned with optimizing advertising campaigns, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include assigning each attribute a color and each attribute value a variant of the color assigned to its attribute in Merriman et al, as seen in Montague, as an effective means of communicating attribute values and detecting trends (see Montague, column 10, lines 55-59) in the Merriman et al system.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Srinivasan et al (US 2002/0042739) disclose conducting real-time, online experiments on a sample of transactions.



-Cantrell (US 2002/0103698) disclose enabling user control over the creation and deployment of banner ad campaigns.

-Granik et al (US 2002/0010757) disclose advertisement replacement.

-d'Eon et al (USPN 6006197) disclose a web advertising measurement system.

-Roberts et al (USPN 6895387) disclose dynamically marketing products and/or services.

-Lee et al (US 2002/0188508) disclose assembling, storing, and administering all of a company's merchandising.


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571) 272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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adb  
February 17, 2006

  
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PATENT EXAMINER  
A.U. 3623